AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 | 21

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0001	03-Dec-2004	W16ROE-4302-4908	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
USA ENGINEER DISTRICT, NEW YORK ATTN:CENAN-CT ROOM 1843 26 FEDERAL PLAZA NEW YORK NY 10278	W912DS	See Item 6	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. W912DS-05-B-0002
	X	9B. DATED (SEE ITEM 11) 22-Nov-2004
		10A. MOD. OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [ ] is extended, [X] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

This solicitation is amended as follows:

1. To revise Option CLIN(s) 0005, 0006, and 0007;
2. To incorporate and provide revised and reissued drawings;
3. To incorporate additional, and revise previous provided specifications;
4. To incorporate contractor submitted questions and provide answers to such, herein;
5. All other terms and conditions remain unchanged (SEE SF30 CONTINUATION PAGE).

The bid opening date remains unchanged.

NOTE: OFFERORS MUST ACKNOWLEDGE RECEIPT OF THIS AMENDMENT BY THE DATE SPECIFIED IN THE SOLICITATION (OR AS AMENDED) BY ONE OF THE FOLLOWING METHODS: IN THE SPACE PROVIDED ON THE SF1442, BY SEPARATE LETTER, OR BY TELEGRAM, OR BY SIGNING BLOCK 15 BELOW. FAILURE TO ACKNOWLEDGE AMENDMENTS BY THE DATE AND TIME SPECIFIED MAY RESULT IN REJECTION OF YOUR BID IN ACCORDANCE WITH THE LATE BID, LATE MODIFICATIONS OF BIDS OR LATE WITHDRAWAL OF BIDS (FAR14.304).

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED 03-Dec-2004

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION SF 30 - BLOCK 14 CONTINUATION PAGE

The following have been added by full text:
AMENDMENT 0001

TO BIDDERS

The following changes shall be made to the drawings and specifications.

DRAWINGS

1. The following DRAWINGS have been **REVISED** and **REISSUED**:

   a. G-001 Cover Sheet
   b. S-102 Steel Framing Plan
   c. S-103 Roof Support Plan
   d. S-104 Column Schedule
   e. S-105 Miscellaneous Steel Sections
   f. S-107 Roof Framing Plan
   g. S-108 Masonry Details
   h. E-04 System Plan
   i. E-05 Single Line Diagram – Electrical Details
   j. E-09 System Details
   k. A-201 Building Elevations
   l. A-401 Enlarged Bathroom Plans and Elevations
   m. A-402 Enlarged Bathroom Plans and Elevations
   n. A-600 Finish Schedule
   o. A-700 Enlarged Casework Plans and Details
   p. A-701 Enlarged Casework Plans and Details
   q. A-704 Signage Schedule and Details

2. The following DRAWINGS have been **REISSUED** for clarity:

   a. M-100 Floor Plan - Ductwork

3. The following DRAWINGS have been **REVISED** but NOT **REISSUED**.

   a. E-01- Symbols, Abbreviations & Electrical Site Plan; **REPLACE** “double gang box wdth single gang reducer in 1” C.” where it appears in column labeled “SYMBOL (SYSTEMS)” with the following: “double gang box with double gang reducer in 1” C.”

b. FA-01, Fire Alarm Floor Plan; ADD the following note: “Fire Alarm Strobes and Fire Alarm Horn/Strobes shall be clearly marked as “FIRE” to differentiate Fire Strobes from those installed with the Mass Notification System.

SPECIFICATIONS

1. The following SPECIFICATION SECTIONS have been **ADDED** and are provided in their entirety herein:

a. Section 08110 - Steel Doors and Frames.

b. Section 08120 - Aluminum Doors and Frames.

c. Section 08210 - Wood Doors.

2. The following SPECIFICATIONS SECTIONS have been **DELETED** in their entirety:

None

3. The following SPECIFICATIONS have been **REVISED** and **REISSUED** in their entirety:

a. Table of Contents (TOC).

b. Section 16710A – Premises Distribution System.

BIDDER’S QUESTIONS AND GOVERNMENT REPLY

(Questions that may be of general interest of all bidders/Government and that are not readily answered by the proceeding changes will appear below. These questions may have been paraphrased or altered to represent several questions regarding the same subject and/or clarify and simplify the question(s). Questions and answers are issued to the Offerors/Bidders for information only.)

Question (Q): Specification sections appear to be missing for wood doors, hollow metal doors and frames, and aluminum entrances.

Response (R): The following specification section have been provided with this amendment:

Section 08110 - Steel Doors and Frames.

Section 08120 - Aluminum Doors and Frames.

Section 08210 - Wood Doors.

Q. Specification Sections 10999 – Miscellaneous Specialties, 15172 - Variable Frequency Drive, 15181 - Chilled, Chilled-Hot, and Condenser Water Piping Systems, 15620 A - Liquid Chillers, 16375A - Electrical Distribution System, Underground, and 16815A - Cable Television Premises Distribution System are in the documents but are not listed in the table of contents. Please advise the intent.

R: A corrected Main Table of Contents (MTOC) has been reissued with this Amendment. The above sections had been added to the MTOC.

Q. Specification Section 16610 - Static Uninterruptible Power Supply (UPS) Reverse Transfer System is listed in the table of contents but is not in the documents.

R: The above section has been deleted from the MTOC issued with this amendment.

Q. Specification Section -16710A appears to be a rough draft version of the intended “final” version.

R: This specification section has been corrected and finalized and issued as a part of this Amendment.

Q. Drawing M-100 appears to be “crossed” out.

R: Drawing M-100 has been reissued for clarity.

MAIN TABLE OF CONTENTS

MTOC –1

MTOC -2

MTOC -3

16710A PREMISES DISTRIBUTION SYSTEM

16711A TELEPHONE SYSTEM, OUTSIDE PLANT

16770 RADIO AND PUBLIC ADDRESS SYSTEMS

16815A CABLE TELEVISION PREMISES DISTRIBUTION SYSTEM

MTOC -5

REVISED WAGE RATE DETERMINATION

GENERAL DECISION: **NY20030020** 12/03/2004 NY20

Date: December 3, 2004
General Decision Number: **NY20030020** 12/03/2004

Superseded General Decision Number: NY020020 nj12/03/04

State: New York

Construction Type: Building

County: Niagara County in New York.

BUILDING CONSTRUCTION PROJECTS (except single family homes and apartments up to and including 4 stories),

Modification Number	Publication Date
0	06/13/2003
1	05/28/2004
2	06/18/2004
3	07/16/2004
4	09/24/2004
5	10/15/2004
6	12/03/2004

* ASBE0004-001 06/01/2004

	Rates	Fringes
Hazardous Material Handler	$ 17.92	8.25
Insulator/asbestos worker (include application of all materials, protective coverings, coatings, and finishings to all types of mechanical systems)	$ 24.50	10.82

BRNY0045-002 07/01/2004

	Rates	Fringes
Bricklayer, Stonemason	$ 27.19	12.20
Marble mason	$ 26.62	12.20
Pointer, cleaner and caulker	$ 26.74	12.20
Tile & Terrazzo Worker	$ 26.69	12.20

CARP0009-003 05/15/2002

NORTH TONAWANDA

	Rates	Fringes
Carpenters: (Including drywall hangers and acoustical ceiling)		
Carpenters, Millwrights, Piledrivermen and Soft Floor Layers	$ 24.48	13.89

CARP0280-004 07/01/2004

REMAINDER OF COUNTY

	Rates	Fringes
Carpenters: (Including Drywall Hangers and acoustical ceiling)		
Carpenters and Soft Floor Layers	$ 24.92	17.25
Millwrights	$ 25.02	17.25

ELEC0237-001 06/01/2004

	Rates	Fringes
Electricians:		
Cable Splicers	$ 29.70	14.95
Electricians	$ 27.00	14.95

ELEV0014-001 01/01/2004

	Rates	Fringes
Elevator Mechanic	$ 32.115	10.80+a

FOOTNOTE:

a. New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day, and the Day after Thanksgiving plus 6% Men under 5 years based on regular hourly rate for all hours worked 8% Men over 5 years based on regular houly rate for all hours worked

ENGI0463-004 07/01/2004

	Rates	Fringes
Power equipment operators:		
Backhoe Operators	$ 27.07	15.60
Bulldozer	$ 27.07	15.60
Forklift Operator/Lull	$ 27.07	15.60
Loader	$ 27.07	15.60
Roller	$ 27.07	15.60

IRON0009-003 07/01/2003

	Rates	Fringes
Ironworkers:		
IRONWORKER	$ 25.59	13.38
SHEETER	$ 28.15	13.38

LABO0091-001 07/01/2003

	Rates	Fringes
Laborers:		
GROUP 1	$ 22.75	16.46+a
GROUP 2	$ 25.03	16.46+a
GROUP 3	$ 23.75	16.46+a
GROUP 4	$ 23.60	16.46+a
GROUP 5	$ 23.35	16.46+a
GROUP 6	$ 23.05	16.46+a
GROUP 8	$ 27.75	16.46+a
GROUP 7	$ 24.75	16.46+a
GROUP 9	$ 20.48	16.46+a

LABORER CLASSIFICATIONS

GROUP 1: Common Laborers, Decontamination of all machines; Horizontal Directional Drill/Locator; All terrain vehicles with attachments/All wheel or track types

GROUP 2: Blasters, Grade Checker; 10% of Base Rate

GROUP 3: Wagon Drill-Airtrack, Self-Contained Drill

GROUP 4: Laser Beam Operator

GROUP 5: Road Finisher, Form Setter, Gunnite Nozzleman, Sandblasters, Burning Torch, Concrete Saw Operators, Grout Machine and Grout Pumps Operator

GROUP 6: Video Machine Operator in inspection of Pipe

GROUP 7: Potman, Pipelayers, Pavement Breakers or Busters, jackhammer operators; barco rammers; chain saw; powder monkey; black top rakers; scalers; drill tenders; mortar mixers; Concrete polishing machine; Operation & maintenance of all Robotic Remote Systems in hazardous environment; Peration C men working from swinging scaffold bosum chair; suspended cage or bucket; work in caissons below 8 feet; concrete motor buggy; all other operators of mechanical tools, including vibrators egardless of type of power.

GROUP 8: The handling, loadin, unloading, stacking, distribution, erection and dismantling of any and all types of scaffolding and/or work platforms used in the removal of insulating material regardless of the composition of said material. The removal of all insulation materials whether they contain asbestos or not from mechanical systems,

(pipes, boilers,ducts, flues, breechings, etc.) on all mechanical systems (pipes, boilers, ducts, flues, breeching, etc.) that are going to be scrapped. The removal of all insulating materials whether they contain asbestos or not. The removal of all asbestos containing materials from walls, ceilings, floors, columns and all other non-mechanical structures and surfaces, etc;

GROUP 9: Use of supplied air respirators

GROUP 10: Railway maintenance work - 90% of Base Rate

FOOTNOTE:

a. PAID HOLIDAYS: Memorial Day, Labor Day, Thanksgiving Day

PAIN0004-009 05/01/2004

TOWNSHIPS OF HARTLAND, LOCKPORT NORTH TONAWANDA, NEWFANE, PENDLETON, ROYALTON, SOMERSET and the eastern halves of CAMBRIA and WILSON

	Rates	Fringes
Painters:		
BRUSH & ROLLER	$ 22.89	12.75
DRYWALL/TAPING	$ 23.39	12.75

PAIN0004-010 05/01/2004

TOWNSHIPS OF LEWISTON, NIAGARA FALLS, PORTER, WHEATFIELD and the western halves of CAMBRIA and WILSON

	Rates	Fringes
Painters:		
Painters	$ 22.47	12.28
Tapers/Dry Wall	$ 22.72	12.28

PAIN0004-012 05/01/2004

	Rates	Fringes
Glazier	$ 21.99	10.13

PLAS0111-003 07/01/2002

	Rates	Fringes
Cement Finisher	$ 24.25	14.42
Plasterer	$ 23.53	14.42

PLUM0022-005 05/01/2004

	Rates	Fringes

Plumber and Steamfitter	$ 28.60	11.48

ROOF0074-002 06/01/2004

	Rates	Fringes
Roofers:		
Composition	$ 23.00	10.91
Slate & Tile	$ 23.15	10.91

SHEE0071-002 05/13/2003

	Rates	Fringes
Sheet metal worker	$ 25.78	10.28

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal

process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

SECTION 00010 (REVISED)

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0001		1	Lump Sum		

BASE BID
FFP
All work for the FY05 Military Entrance Processing Station (MEPS) as described in the plans and specifications, including all plant, labor and materials, complete and excluding Items Nos. 2, and 3 below and all options.
PURCHASE REQUEST NUMBER: W16ROE-4302-4908

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0002		1	Lump Sum		

SITE WORK
FFP
All work outside the five-foot line of the building perimeter, inclusive of demolition (As defined by the Civil (C-series) drawings, drawings AD-101 and AD-102 and the specifications.

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0003		1	Lump Sum		

FINAL RECORD DRAWING SUBMISSION
FFP
All work for the Final Record Drawing Submission (See paragraph 10 of Section 00800).

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0004		1	Lump Sum		
OPTION	OPTIONAL BID ITEM No. 1 FFP Provide brick and masonry building sign as shown on drawing A-704, Elevations & Detail B, C & 2, in lieu of the sign shown on drawing A-704, Elevation & Detail A & 1.				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0005		1	Lump Sum		
OPTION	OPTIONAL BID ITEM No. 2 FFP Parking area, east of MEPS; Resurfacing and, striping and lighting of parking area directly behind (east of) the MEPS.				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006		1	Lump Sum		
OPTION	OPTIONAL BID ITEM No. 3 FFP Sidewalk connecting MEPS with Gymnasium (Bldg 855) parking area (approx. 85 linear feet of 4' wide sidewalk) and parking lot lighting, as described in Electrical Site Plan Key Note 5.a of drawing E-01.				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0007		1	Lump Sum		
OPTION	OPTIONAL BID ITEM No. 4 FFP Provide Aall work landscaping (includingexcept seed or sod) and irrigation as shown on drawing C-6, and/or described in the specification. in lieu of seeding for entire site.				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0008		1	Lump Sum		
OPTION	OPTIONAL BID ITEM No. 5 FFP Two Computer Workstations (CPU, Monitor, keyboard, mouse, and compatible software, etc.) as described in section 15951 of the Specification.				

NET AMT

FOB: Destination

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0009		1	Lump Sum		
OPTION	OPTIONAL BID ITEM No. 6 FFP Under-floor, radiant heating for the Male and Female Ortho rooms, as shown on drawings M-101 and M-505, and described in the specifications.				

NET AMT

FOB: Destination

TOTAL BASE BID PRICE: $ _____

TOTAL BID WITH OPTIONAL BID ITEMS NO. 1 THRU NO. 6: $ _____

NOTES:

1. The low bidder for purposes of award will be the conforming responsible bidder offering the lowest amount for the Base Bid Item plus all Optional Bid Items.

2. The minimum construction award will be the amount bid for the Base Bid Items.

3. Bidders are required to bid on the Base Bid and all Optional Bid Items or their bids will be rejected.

4. Bidders are reminded that they must bid on the issued plans and specifications as amended. Any deviations, conditions or attachments made by the bidder himself thereto may render the bid non-responsive and be cause for its rejection.

5. Option #1, 2, 3 and 4: At any time prior to 180 calendar days after award of the contract, the Government at its option, may direct the Contractor, by written order, to perform the work and/or services provided under Option #1.

6. Option #5: At any time prior to 300 calendar days after award of the contract, the Government at its option, may direct the Contractor, by written order to perform the work and/or services provided under Option #5.

7. Option #6: At any time prior to 90 calendar days after award of the contract, the Government at its option, may direct the Contractor, by written order to perform the work and/or services provided under Option #6.

8. Award of any or all of the Optional Bid items will not extend or reduce the contract duration indicated in Paragraph 1 of Section 00800 or elsewhere in the contract documents.

SECTION 00010 - SOLICITATION CONTRACT FORM

CLIN 0005

The CLIN extended description has changed from Parking area, east of MEPS; Resurfacing, striping and lighting of parking area directly behind (east of) the MEPS. to Parking area, east of MEPS; Resurfacing and, striping and lighting of parking area directly behind (east of) the MEPS..

CLIN 0006

The CLIN extended description has changed from Sidewalk connecting MEPS with Gymnasium (Bldg

855) parking area. to Sidewalk connecting MEPS with Gymnasium (Bldg 855) parking area (approx. 85 linear feet of 4' wide sidewalk) and parking lot lighting, as described in Electrical Site Plan Key Note 5.a of drawing E-01..

CLIN 0007

The CLIN extended description has changed from All work landscaping (except seed or sod) and irrigation as shown on drawing C-6, and/or described in the specification. to Provide Aall work landscaping (includingexcept seed or sod) and irrigation as shown on drawing C-6, and/or described in the specification. in lieu of seeding for entire site..

(End of Summary of Changes)

SECTION 08110

STEEL DOORS AND FRAMES

05/01

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A250.4	(1994) Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings
ANSI A250.6	(1997) Hardware on Standard Steel Doors (Reinforcement - Application)
ANSI A250.8	(1998) SDI-100 Recommended Specifications for Standard Steel Doors and Frames

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 591	(1998) Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications
ASTM A 653/A 653M	(2000) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A 924/A 924M	(1999) General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
ASTM C 578	(1995) Rigid, Cellular Polystyrene Thermal Insulation
ASTM C 591	(1994) Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM C 612	(1993) Mineral Fiber Block and Board Thermal Insulation
ASTM D 2863	(1997) Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)

DOOR AND HARDWARE INSTITUTE (DHI)

DHI A115	(1991) Steel Door Preparation Standards

(Consisting of A115.1 through A115.6 and A115.12 through A115.18)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80	(1999) Fire Doors and Fire Windows
NFPA 105	(1999) The Installation of Smoke-Control Door Assemblies
NFPA 252	(1999) Standard Methods of Fire Tests of Door Assemblies

STEEL DOOR INSTITUTE (SDOI)

SDI 105	(1998) Recommended Erection Instructions for Steel Frames
SDI 111-B	Recommended Standard Details for Dutch Doors
SDI 113	(1979) Apparent Thermal Performance of STEEL DOOR and FRAME ASSEMBLIES

UNDERWRITERS LABORATORIES (UL)

UL 10B	(1997) Fire Tests of Door Assemblies

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

Doors; G

Frames; G

Accessories; G

Weatherstripping; G

Show elevations, construction details, metal gages, hardware provisions, method of glazing, and installation details.

Schedule of doors; G

Schedule of frames; G

Submit door and frame locations.

SD-03 Product Data

Doors; G

Frames; G

Accessories; G

Weatherstripping; G

Submit manufacturer's descriptive literature for doors, frames, and accessories. Include data and details on door construction, panel (internal) reinforcement, insulation, and door edge construction. When "custom hollow metal doors" are provided in lieu of "standard steel doors," provide additional details and data sufficient for comparison to ANSI A250.8 requirements.

SD-04 Samples

Factory-applied enamel finish; G

Where colors are not indicated, submit manufacturer's standard colors and patterns for selection.

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver doors, frames, and accessories undamaged and with protective wrappings or packaging. Provide temporary steel spreaders securely fastened to the bottom of each welded frame. Store doors and frames on platforms under cover in clean, dry, ventilated, and accessible locations, with 6 mm airspace between doors. Remove damp or wet packaging immediately and wipe affected surfaces dry. Replace damaged materials with new.

PART 2 PRODUCTS

2.1 STANDARD STEEL DOORS

ANSI A250.8, except as specified otherwise. Prepare doors to receive hardware specified in Section 08710, "Door Hardware." Undercut where indicated. Exterior doors shall have top edge closed flush and sealed to prevent water intrusion. Doors shall be 44.5 mm thick, unless otherwise indicated.

2.1.1 Classification - Level, Performance, Model
2.1.1.1 Standard Duty Doors

ANSI A250.8, Level 1, physical performance Level
c, of sizes and designs indicated and core construction as required by the manufacturer. Provide where shown for doors as per door schedule.

2.2 INSULATED STEEL DOOR SYSTEMS

Insulated steel doors shall have a core of polyurethane foam and an R factor of 10.0 or more (based on a k value of 0.16); face sheets, edges, and frames of galvanized steel not lighter than 1.5 mm thick, and 1.5 mm respectively; magnetic weatherstripping; nonremovable-pin hinges; thermal-break aluminum threshold; and vinyl door bottom. Doors and frames shall receive phosphate treatment, rust-inhibitive primer, and painted finish. Doors shall have been tested in accordance with ANSI A250.4 and shall have met the requirements for Level C. Prepare doors to receive hardware specified in Section 08710, "Door Hardware." Doors shall be 44.5 mm thick. Provide insulated steel doors and frames and be as per schedule Exterior Doors

2.3 SOUND RATED STEEL DOORS

Doors shall be of the sound classification scheduled.

2.4 ACCESSORIES

2.4.1 Shelves for Dutch Doors

SDI 111-B. Fabricate shelves of steel not lighter than 1.5 mm thick, 304 mm wide. Brackets shall be stock type fabricated of the same metal used to fabricate shelves.

2.4.2 Astragals

For pairs of exterior steel doors which will not have aluminum astragals or removable mullions, as specified in Section 08710, "Door Hardware," provide overlapping steel astragals with the doors. For interior pairs of doors, provide stainless steel astragals complying with NFPA 105 for smoke control assemblies.

2.4.3 Moldings

Provide moldings around glass of interior and exterior doors and louvers of interior doors. Provide nonremovable moldings on outside of exterior doors and on corridor side of interior doors. Other moldings may be stationary or removable. Secure inside moldings to stationary moldings, or provide snap-on moldings. Muntins shall interlock at intersections and shall be fitted and welded to stationary moldings.

2.5 INSULATION CORES

Insulated cores shall be of type specified, and provide an apparent U-factor of .48 in accordance with SDI 113 and shall conform to:

a. Rigid Polyurethane Foam: ASTM C 591, Type 1 or 2, foamed-in-place or in board form, with oxygen index of not less than 22 percent when tested in accordance with ASTM D 2863; or

b. Rigid Polystyrene Foam Board: ASTM C 578, Type I or II; or

c. Mineral board: ASTM C 612, Type I.

2.6 STANDARD STEEL FRAMES

ANSI A250.8, except as otherwise specified. Form frames to sizes and shapes indicated, with welded corners. Provide steel frames for doors, transoms, sidelights, mullions, cased openings, and interior glazed panels, unless otherwise indicated.

2.6.1 Welded Frames

Continuously weld frame faces at corner joints. Mechanically interlock or continuously weld stops and rabbets. Grind welds smooth.

2.6.2 Mullions and Transom Bars

Mullions and transom bars shall be closed or tubular construction and shall all member with heads and jambs butt-welded thereto. Bottom of door mullions shall have adjustable floor anchors and spreader connections.

2.6.3 Stops and Beads

Form stops and beads from 0.9 mm thick steel. Provide for glazed and other openings in standard steel frames. Secure beads to frames with oval-head, countersunk Phillips self-tapping sheet metal screws or concealed clips and fasteners. Space fasteners approximately 300 to 400 mm on centers. Miter molded shapes at corners. Butt or miter square or rectangular beads at corners.

2.6.4 Cased Openings

Fabricate frames for cased openings of same material, gage, and assembly as specified for metal door frames, except omit door stops and preparation for hardware.

2.6.5 Anchors

Provide anchors to secure the frame to adjoining construction. Provide steel anchors, zinc-coated or painted with rust-inhibitive paint, not lighter than 1.2 mm thick.

2.6.5.1 Wall Anchors

Provide at least three anchors for each jamb. For frames which are more than 2285 mm in height, provide one additional anchor for each jamb for each additional 760 mm or fraction thereof.

a. Masonry: Provide anchors of corrugated or perforated steel straps or 5 mm diameter steel wire, adjustable or T-shaped;

b. Stud partitions: Weld or otherwise securely fasten anchors to backs of frames. Design anchors to be fastened to closed steel studs with sheet metal screws, and to open steel studs by welding];

2.6.5.2 Floor Anchors

Provide floor anchors drilled for 10 mm anchor bolts at bottom of each jamb member. Where floor fill occurs, terminate bottom of frames at the indicated finished floor levels and support by adjustable extension clips resting on and anchored to the structural slabs.

2.7 FIRE DOORS AND FRAMES

NFPA 80 and NFPA 80A and this specification. The requirements of NFPA 80 and NFPA 80A shall take precedence over details indicated or specified.

2.7.1 Labels

Fire doors and frames shall bear the label of Underwriters Laboratories (UL), attesting to the rating required. Testing shall be in accordance with NFPA 252 or UL 10B. Labels shall be metal with raised letters, and shall bear the name or file number of the door and frame manufacturer. Labels shall be permanently affixed at the factory to frames and to the hinge edge of the door. Door labels shall not be painted.

2.7.2 Oversized Doors

For fire doors and frames which exceed the size for which testing and labeling are available, furnish certificates stating that the doors and frames are identical in design, materials, and construction to a door which has been tested and meets the requirements for the class indicated.

2.7.3 Astragal on Fire Doors

On pairs of labeled fire doors, conform to NFPA 80 and UL requirements.

2.8 WEATHERSTRIPPING

As specified in Section 08710, "Door Hardware."

2.9 HARDWARE PREPARATION

Provide minimum hardware reinforcing gages as specified in ANSI A250.6. Drill and tap doors and frames to receive finish hardware. Prepare doors and frames for hardware in accordance with the applicable requirements of ANSI A250.8 and ANSI A250.6. For additional requirements refer to DHI A115. Drill and tap for surface-applied hardware at the project site. Build additional reinforcing for surface-applied hardware into the door at the factory. Locate hardware in accordance with the requirements of ANSI A250.8, as applicable. Punch door frames, with the exception of frames that will have weatherstripping or lightproof or soundproof gasketing, to receive a minimum of two rubber or vinyl door silencers on lock side of single doors and one silencer for each leaf at heads of double doors. Set lock strikes out to provide clearance for silencers.

2.10 FINISHES

2.10.1 Factory-Primed Finish

All surfaces of doors and frames shall be thoroughly cleaned, chemically treated and factory primed with a rust inhibiting coating as specified in ANSI A250.8. Where coating is removed by welding, apply touchup of factory primer.

2.10.2 Hot-Dip Zinc-Coated and Factory-Primed Finish

Fabricate exterior doors and frames from hot dipped zinc coated steel, alloyed type, that complies with ASTM A 924/A 924M and ASTM A 653/A 653M. The Coating weight shall meet or exceed the minimum requirements for coatings having 122 grams per square meter, total both sides, i.e., ZF120. Repair damaged zinc-coated surfaces by the application of zinc dust paint. Thoroughly clean and chemically treat to insure maximum paint adhesion. Factory prime as specified in ANSI A250.8.

]2.10.3 Electrolytic Zinc-Coated Anchors and Accessories

Provide electrolytically deposited zinc-coated steel in accordance with ASTM A 591, Commercial Quality, Coating Class A. Phosphate treat and factory prime zinc-coated surfaces as specified in ANSI A250.8.

2.11 FABRICATION AND WORKMANSHIP

Finished doors and frames shall be strong and rigid, neat in appearance, and free from defects, waves, scratches, cuts, dents, ridges, holes, warp,

and buckle. Molded members shall be clean cut, straight, and true, with joints coped or mitered, well formed, and in true alignment. Dress exposed welded and soldered joints smooth. Design door frame sections for use with the wall construction indicated. Corner joints shall be well formed and in true alignment. Conceal fastenings where practicable. On wraparound frames for masonry partitions, provide a throat opening 3 mm larger than the actual masonry thickness. Design other frames in exposed masonry walls or partitions to allow sufficient space between the inside back of trim and masonry to receive calking compound.

2.11.1 Grouted Frames

For frames to be installed in exterior walls and to be filled with mortar or grout, fill the stops with strips of rigid insulation to keep the grout out of the stops and to facilitate installation of stop-applied head and jamb seals.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Frames

Set frames in accordance with SDI 105. Plumb, align, and brace securely until permanent anchors are set. Anchor bottoms of frames with expansion bolts or powder-actuated fasteners. Build in or secure wall anchors to adjoining construction. Where frames require ceiling struts or overhead bracing, anchor frames to the struts or bracing. Backfill frames with mortar. When an additive is provided in the mortar, coat inside of frames with corrosion-inhibiting bituminous material. For frames in exterior walls, ensure that stops are filled with rigid insulation before grout is placed.

3.1.2 Doors

Hang doors in accordance with clearances specified in ANSI A250.8. After erection and glazing, clean and adjust hardware.

3.1.3 Fire Doors and Frames

Install fire doors and frames, including hardware, in accordance with NFPA 80. Install fire rated doors and frames in accordance with NFPA 80.

3.2 PROTECTION

Protect doors and frames from damage. Repair damaged doors and frames prior to completion and acceptance of the project or replace with new, as directed. Wire brush rusted frames until rust is removed. Clean thoroughly. Apply an all-over coat of rust-inhibitive paint of the same type used for shop coat.

3.3 CLEANING

Upon completion, clean exposed surfaces of doors and frames thoroughly. Remove mastic smears and other unsightly marks.

3.4 SCHEDULE

Some metric measurements in this section are based on mathematical

conversion of inch-pound measurements, and not on metric measurement commonly agreed to by the manufacturers or other parties. The inch-pound and metric measurements are as follows:

PRODUCTS	INCH-POUND	METRIC
Door thickness	1 3/4 inches	44.5 mm
Steel channels	16 gage	1.5 mm
Steel Sheet	23 gage	0.7 mm
	16 gage	1.5 mm
	20 gage	0.9 mm
	18 gage	1.2 mm
Anchor bolts	3/8 inches	10 mm

-- End of Section --

SECTION 08120

ALUMINUM DOORS AND FRAMES
09/99

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)

AAMA 605.2	(1992; Addendum 1995) High Performance Organic Coatings on Architectural Extrusions and Panels

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36/A 36M	(1997; Rev. A) Carbon Structural Steel
ASTM B 209M	(1995) Aluminum and Aluminum-Alloy Sheet and Plate (Metric)
ASTM B 221M	(1996) Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM E 283	(1991) Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E 331	(1996) Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference

1.2 PERFORMANCE REQUIREMENTS

1.2.1 Structural

Shapes and thicknesses of framing members shall be sufficient to withstand a design wind load of not less than 1.4 kilopascals of supported area or the design wind load indicated with a deflection of not more than 1/175 times the length of the member and a safety factor of not less than 1.65. Provide glazing beads, moldings, and trim of not less than 1.25 mm nominal thickness.

1.2.2 Air Infiltration

When tested in accordance with ASTM E 283, air infiltration shall not exceed 2.63 by 10-5 cms per square meter of fixed area at a test pressure of 0.30 kPa (80 kilometers per hour wind).

1.2.3 Water Penetration

When tested in accordance with ASTM E 331, there shall be no water penetration at a pressure of 0.38 kPa of fixed area.

1.3 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

Doors and frames; G

Show elevations of each door type, size of doors and frames, metal gages, details of door and frame construction, methods of anchorage, glazing details, weatherstripping, provisions for and location of hardware, and details of installation.

SD-08 Manufacturer's Instructions

Doors and frames

Submit detail specifications and instructions for installation, adjustments, cleaning, and maintenance.

1.4 DELIVERY, STORAGE, AND HANDLING

Inspect materials delivered to the site for damage. Unload and store with minimum handling. Provide storage space in dry location with adequate ventilation, free from dust or water, and easily accessible for inspection and handling. Stack materials on nonabsorptive strips or wood platforms. Do not cover doors and frames with tarps, polyethylene film, or similar coverings. Protect finished surfaces during shipping and handling using manufacturer's standard method, except that no coatings or lacquers shall be applied to surfaces to which calking and glazing compounds must adhere.

PART 2 PRODUCTS

2.1 DOORS AND FRAMES

Swing-type aluminum doors and frames of size, design, and location indicated. Provide doors complete with frames, framing members, subframes, transoms, adjoining sidelights, adjoining window wall, trim, and accessories.

2.2 MATERIALS

2.2.1 Anchors

Stainless steel [or steel with hot-dipped galvanized finish].

2.2.2 Weatherstripping

Continuous wool pile, silicone treated, or type recommended by door manufacturer.

2.2.3 Aluminum Alloy for Doors and Frames

ASTM B 221M, Alloy 6063-T5 for extrusions. ASTM B 209M, alloy and temper best suited for aluminum sheets and strips.

2.2.4 Fasteners

Hard aluminum or stainless steel.

2.2.5 Structural Steel

ASTM A 36/A 36M.

2.2.6 Aluminum Paint

Type as recommended by aluminum door manufacturer.

2.3 FABRICATION

2.3.1 Aluminum Frames

Extruded aluminum shapes with contours approximately as indicated. Provide removable glass stops and glazing beads for frames accommodating fixed glass. Use countersunk stainless steel Phillips screws for exposed fastenings, and space not more than 300 mm o.c. Mill joints in frame members to a hairline fit, reinforce, and secure mechanically.

2.3.2 Aluminum Doors

Of type, size, and design indicated and not less than 45 mm thick. Minimum wall thickness, 3 mm, except beads and trim, 1.25 mm. Door sizes shown are nominal and shall include standard clearances as follows: 2.5 mm at hinge and lock stiles, 3 mm between meeting stiles, 3 mm at top rails, 5 mm between bottom and threshold, and 17 mm between bottom and floor. Bevel single-acting doors 2 or 3 mm at lock, hinge, and meeting stile edges. Double-acting doors shall have rounded edges at hinge stile, lock stile, and meeting stile edges.

2.3.2.1 Full Glazed Stile and Rail Doors

Doors shall have narrow stiles and rails as indicated. Fabricate from extruded aluminum hollow seamless tubes or from a combination of open-shaped members interlocked or welded together. Fasten top and bottom rail together by means of welding or by 10 or 13 mm diameter cadmium-plated tensioned steel tie rods. Provide an adjustable mechanism of jack screws or other methods in the top rail to allow for minor clearance adjustments after installation.

2.3.3 Weatherstripping

Provide on stiles and rails of exterior doors. Fit into slots which are integral with doors or frames. Weatherstripping shall be replaceable without special tools, and adjustable at meeting rails of pairs of doors. Installation shall allow doors to swing freely and close positively. Air leakage of a single leaf weatherstripped door shall not exceed 2.19 x 10-5 cubic meter per second of air per square meter of door area when tested in accordance with ASTM E 283.

2.3.4 Anchors

On the backs of subframes, provide anchors of the sizes and shapes indicated for securing subframes to adjacent construction. Anchor transom bars at ends and mullions at head and sill. Reinforce vertical mullions with structural steel members of sufficient length to extend up to the overhead structural slab or framing and secure thereto. Reinforce and anchor freestanding door frames to floor construction as indicated on approved shop drawings and in accordance with manufacturer's recommendation. Place anchors near top and bottom of each jamb and at intermediate points not more than 635 mm apart.

2.3.5 Provisions for Hardware

Hardware is specified in Section 08710, "Door Hardware." Deliver hardware templates and hardware to the door manufacturer for use in fabrication of aluminum doors and frames. Cut, reinforce, drill, and tap doors and frames at the factory to receive template hardware. Provide doors to receive surface-applied hardware, except push plates, kick plates, and mop plates, with reinforcing only; drill and tap in the field. Provide hardware reinforcements of stainless steel or steel with hot-dipped galvanized finish, and secure with stainless steel screws.

2.3.6 Provisions for Glazing

Provide extruded aluminum snap-in glazing beads on interior side of doors. Provide extruded aluminum, theft-proof, snap-in glazing beads or fixed glazing beads on exterior or security side of doors. Glazing beads shall have vinyl insert glazing gaskets. Design glazing beads to receive glass of thickness indicated or specified. Glazing is specified in Section 08800N, "Glazing."

2.3.7 Finishes

Provide exposed aluminum surfaces with factory finish of anodic coating or organic coating.

2.3.7.1 Organic Coating

Clean and prime exposed aluminum surfaces. Provide a high-performance finish in accordance with AAMA 605.2 with total dry film thickness of not less than 0.03 mm. The finish color shall be as indicated.

PART 3 EXECUTION

3.1 INSTALLATION

Plumb, square, level, and align frames and framing members to receive doors adjoining sidelights and adjoining window walls. Anchor frames to adjacent construction as indicated and in accordance with manufacturer's printed instructions. Anchor bottom of each frame to rough floor construction with 2.4 mm thick stainless steel angle clips secured to back of each jamb and to floor construction; use stainless steel bolts and expansion rivets for fastening clip anchors. Seal metal-to-metal joints between framing members as specified in Section 07920N, "Joint Sealants." Hang doors to produce clearances specified by manufacturer. After erection and glazing, adjust doors and hardware to operate properly.

3.2 PROTECTION FROM DISSIMILAR MATERIALS

3.2.1 Dissimilar Metals

Where aluminum surfaces come in contact with metals other than stainless steel, zinc, or small areas of white bronze, protect from direct contact by one or a combination of the following methods:

a. Paint the dissimilar metal with one coat of heavy-bodied bituminous paint.

b. Apply a good quality elastomeric sealant between the aluminum and the dissimilar metal.

c. Paint the dissimilar metal with one coat of primer and one coat of aluminum paint.

d. Use a nonabsorptive tape or gasket in permanently dry locations.

3.2.2 Drainage from Dissimilar Metals

In locations where drainage from dissimilar metals has direct contact with aluminum, provide protective paint, to prevent aluminum discoloration.

3.2.3 Masonry and Concrete

Provide aluminum surfaces in contact with mortar, concrete, or other masonry materials with one coat of heavy-bodied bituminous paint.

3.2.4 Wood or Other Absorptive Materials

Provide aluminum surfaces in contact with absorptive materials subject to frequent moisture, and aluminum surfaces in contact with treated wood, with two coats of aluminum paint or one coat of heavy-bodied bituminous paint. In lieu of painting the aluminum, the Contractor shall have the option of painting the wood or other absorptive surface with two coats of aluminum paint and sealing the joints with elastomeric sealant.

3.3 CLEANING

Upon completion of installation, clean door and frame surfaces in accordance with door manufacturer's recommended procedure. Do not use abrasive, caustic, or acid cleaning agents.

3.4 PROTECTION

Protect doors and frames from damage and from contamination by other materials such as cement mortar. Prior to completion and acceptance of the work, restore damaged doors and frames to original condition, or replace with new ones.

-- End of Section --

SECTION 08210

WOOD DOORS
09/99

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

ARCHITECTURAL WOODWORK INSTITUTE (AWI)

AWI Qual Stds	(1997) Architectural Woodwork Quality Standards and Quality Certification Program

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 80	(1995) Fire Doors and Fire Windows

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)

NWWDA I.S. 1-A	(1993) Architectural Wood Flush Doors
NWWDA TM-5	(1990) Split Resistance Test
NWWDA TM-7	(1990) Cycle - Slam Test
NWWDA TM-8	(1990) Hinge Loading Resistance Test

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-02 Shop Drawings

Doors; G

Submit drawings or catalog data showing each type of door unit ; descriptive data of head and jamb weatherstripping with installation instructions shall be included. Drawings and data shall indicate door type and construction, sizes, thickness, methods of assembly, door louvers, and glazing,.

SD-03 Product Data

Doors; G

SD-04 Samples

Doors

Prior to the delivery of wood doors, submit a sample section of

each type of door which shows the stile, rail, veneer, finish, and core construction.

Door finish colors; G

Submit a minimum of three color selection samples for selection by the Contracting Officer.

SD-06 Test Reports

Split resistance

Cycle-slam

Hinge loading resistance

Submit split resistance test report for doors tested in accordance with NWWDA TM-5, cycle-slam test report for doors tested in accordance with NWWDA TM-7, and hinge loading resistance test report for doors tested in accordance with NWWDA TM-8.

1.3 DELIVERY, STORAGE, AND HANDLING

Deliver doors to the site in an undamaged condition and protect against damage and dampness. Stack doors flat under cover. Support on blocking, a minimum of 100 mm thick, located at each end and at the midpoint of the door. Store doors in a well-ventilated building so that they will not be exposed to excessive moisture, heat, dryness, direct sunlight, or extreme changes of temperature and humidity. Do not store in a building under construction until concrete, masonry work, and plaster are dry. Replace defective or damaged doors with new ones.

1.4 WARRANTY

Warranty shall warrant doors free of defects as set forth in the door manufacturer's door warranty that extends beyond one year.

PART 2 PRODUCTS

2.1 DOORS

Provide doors of the types, sizes, and designs as indicated on drawings.

2.1.1 Flush Doors

Flush doors shall be solid core and shall conform to NWWDA I.S. 1-A, except for the one year acclimatization requirement in paragrapg T-2, which shall not apply. Wood doors shall be 5-ply construction with faces, stiles, and rails bonded to the cores.

2.1.1.1 Core Construction

Solid core door construction shall be glued wood block core with vertical and horizontal edges bonded to the core. Blocking and hardware reinforcements for particle board doors shall be blocking option HB 2-5 in accordance with NWWDA I.S. 1-A.

2.1.2 Face Panels

2.1.2.1 Natural Finished Wood Veneer Doors

Veneer doors to receive natural finish shall be Custom Gradde veneer in accordance with NWWDA I.S. 1-A. Vertical stile strips shall be selected to provide edges of the same species and/or color as the veneer. Door finish shall be in accordance with paragraph FINISHING.

2.2 ACCESSORIES

2.2.1 Door Louvers

Fabricate from wood and of sizes indicated. Louvers shall be of the manufacturer's standard design and shall transmit a minimum of 35 percent free air. Louvers shall be the sightproof insert type. Mount louvers in the door as indicated with flush wood moldings. Metal louvers for wood doors are specified in Section 10201N, "Metal Wall and Door Louvers."

2.2.2 Door Light Openings

Provide glazed openings of size as shown on drawings with the manufacturer's standard wood moldings except that moldings for doors to receive natural finish shall be of the same specie and color as the face veneers. Glazing is specified in Section 08800N, "Glazing."

2.2.3 Additional Hardware Reinforcement

Provide fire rated doors with hardware reinforcement blocking. Size of lock blocks shall be as required to secure the hardware specified. Reinforcement blocking shall be in compliance with the manufacturer's labeling requirements and shall not be mineral material similar to the core.

2.3 FABRICATION

2.3.1 Marking

Each door shall bear a stamp, brand, or other identifying mark indicating quality and construction of the door.

2.3.2 Quality and Construction

Identify the standard on which the construction of the door was based and identify doors having a Type I glue bond.

2.3.3 Adhesives and Bonds

NWWDA I.S. 1-A. Use Type II bond for interior doors. Adhesive for doors to receive a natural finish shall be nonstaining.

2.3.4 Finishing

2.3.4.1 Field Painting

Factory prime or seal doors, and field paint as specified in Section 09900, "Paints and Coatings."

2.3.4.2 Factory Finish

Provide doors finished at the factory by the door manufacturer as follows: AWI-02 Qual Stds Section 1500. The coating shall be AWI Qual Stds premium, medium rubbed sheen, open grain effect. Use stain when required to produce the finish specified for color. Seal edges, cutouts, trim, and wood accessories, and apply two coats of finish compatible with the door face finish. Touch-up finishes that are scratched or marred, or where exposed fastener holes are filled, in accordance with the door manufacturer's instructions. Match color and sheen of factory finish using materials compatible for field application.

2.3.4.3 Color

Provide door finish colors as indicated on finish schedule.

PART 3 EXECUTION

3.1 INSTALLATION

Before installation, seal top and bottom edges of doors with the approved water-resistant sealer. Seal cuts made on the job immediately after cutting using approved water-resistant sealer. Fit, trim, and hang doors with a 3 mm maximum clearance at sides and top, and a 6 mm maximum clearance over thresholds. Provide 11 mm maximum clearance at bottom where no threshold occurs. Bevel edges of doors at the rate of 3 mm in 50 mm. Door warp shall not exceed 6 mm when measured in accordance with NWWDA I.S. 1-A.

3.1.1 Fire Doors

Installation, hardware, and operational characteristics shall conform to NFPA 80 and NFPA 101 and shall be in strict conformance with the manufacturer's printed instructions. Properly sized pitot holes shall be drilled for screws in door edges. Factory applied labels shall remain intact where instaled. Lockside edge and bottom edge may be trimmed only to the extent recommended by the door manufacturer.

3.2 SCHEDULE

Some metric measurements in this section are based on mathematical conversion of inch-pound measurements, and not on metric measurement commonly agreed to by the manufacturers or other parties. The inch-pound and metric measurements are as follows:

PRODUCTS	INCH-POUND	METRIC
Closet doors	1 1/8 inches	28.5 mm
	1 3/8 inches	35 mm
Weatherstripping	0.0089 inch	0.23 mm
	0.0063 inch	0.16 mm

-- End of Section --

SECTION 16710A

PREMISES DISTRIBUTION SYSTEM
09/02

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ELECTRONIC INDUSTRIES ALLIANCE (EIA)

EIA ANSI/TIA/EIA-568-B	(2000) Transmission Performance Specifications for 4-pair 100 ohm Category 5E Cabling
EIA ANSI/TIA/EIA-568-B.2-1	(2002) Transmission Performance Specifications for 4-pair 100 ohm Category 6 Cabling
EIA ANSI/TIA/EIA-569-A	(2001) Commercial Building Standard for Telecommunications Pathways and Spaces**
EIA ANSI/TIA/EIA-606A	(2002) Administration Standard for the Telecommunications Infrastructure
EIA ANSI/TIA/EIA-607A	(2002) Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
EIA TIA/EIA-TSB-67	(1995) Transmission Performance Specifications for Field Testing of Unshielded Twisted-Pair Cabling Systems**

IBM CORPORATION (IBM)

IBM GA27-3361-07	(1987) LAN Cabling System - Planning and Installation

INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)

ICEA S-83-596	(2001) Fiber Optic Premises Distribution Cable

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2002) National Electrical Code

1.2 SYSTEM DESCRIPTION

The premises distribution system shall consist of inside-plant horizontal, riser, and backbone cables and connecting hardware to transport telephone and data (including LAN) signals between equipment items in a building.

1.3 ENVIRONMENTAL REQUIREMENTS

Connecting hardware shall be rated for operation under ambient conditions of 0 to 60 degrees C and in the range of 0 to 95 percent relative humidity, noncondensing.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Premises Distribution System; G, RO

Detail drawings including a complete list of equipment and material. Detail drawings shall contain complete wiring and schematic diagrams and other details required to demonstrate that the system has been coordinated and will function properly as a system. Drawings shall include vertical riser diagrams, equipment rack details, elevation drawings of telecommunications closet walls, outlet face plate details for all outlet configurations, sizes and types of all cables, conduits, and cable trays. Drawings shall show proposed layout and anchorage of equipment and appurtenances, and equipment relationship to other parts of the work including clearance for maintenance and operation.

Installation; G, RO

Record drawings for the installed wiring system infrastructure per EIA ANSI/TIA/EIA-606A. The drawings shall show the location of all cable terminations and location and routing of all backbone and horizontal cables. The identifier for each termination and cable shall appear on the drawings.

SD-03 Product Data

Record Keeping and Documentation; G, RO

Documentation on cables and termination hardware in accordance with EIA ANSI/TIA/EIA-606A.

Spare Parts; G, RO

Lists of spare parts, tools, and test equipment for each different item of material and equipment specified, after approval of detail drawings, not later than 2 months prior to the date of beneficial occupancy. The data shall include a complete list of parts and supplies, with current unit prices and source of supply, and a list of spare parts recommended for stocking.

Manufacturer's Recommendations; G, RO

Where installation procedures, or any part thereof, are required to be in accordance with the recommendations of the manufacturer of the material being installed, printed copies of these recommendations, prior to installation shall be provided. Installation of the item will not be allowed to proceed until the

recommendations are received and approved.

Test Plan; G, RO

Test plan defining the tests required to ensure that the system meets technical, operational and performance specifications, 60 days prior to the proposed test date. The test plan must be approved before the start of any testing. The test plan shall identify the capabilities and functions to be tested, and include detailed instructions for the setup and execution of each test and procedures for evaluation and documentation of the results.

Qualifications; G, RO

The qualifications of the Manufacturer, Contractor, and the Installer to perform the work specified herein. This shall include proof of the minimum qualifications specified herein.

SD-06 Test Reports

Test Reports; G, RO

Test reports in booklet form with witness signatures verifying execution of tests. Test results will also be provided on 89 mm diskettes in ASCII format. Reports shall show the field tests performed to verify compliance with the specified performance criteria. Test reports shall include record of the physical parameters verified during testing. Test reports shall be submitted within 7 days after completion of testing.

SD-07 Certificates

Premises Distribution System; G, RO

Written certification that the premises distribution system complies with the EIA ANSI/TIA/EIA-568-B.2-1, EIA ANSI/TIA/EIA-569-A, and EIA ANSI/TIA/EIA-606A standards.

Materials and Equipment; G, RO

Where materials or equipment are specified to conform, be constructed or tested to meet specific requirements, certification that the items provided conform to such requirements. Certification by a nationally recognized testing laboratory that a representative sample has been tested to meet the requirements, or a published catalog specification statement to the effect that the item meets the referenced standard, will be acceptable as evidence that the item conforms. Compliance with these requirements does not relieve the Contractor from compliance with other requirements of the specifications.

Installers; G, RO

The Contractor shall submit certification that all the installers are factory certified to install and test the provided products.

1.5 QUALIFICATIONS

1.5.1 Minimum Contractor Qualifications

All work under this section shall be performed by and all equipment shall be furnished and installed by a certified Telecommunications Contractor, hereafter referred to as the Contractor. The Contractor shall have the following qualifications in Telecommunications Systems installation:

a. Contractor shall have a minimum of 3 years experience in the application, installation and testing of the specified systems and equipment.

b. All supervisors and installers assigned to the installation of this system or any of its components shall have factory certification from each equipment manufacturer that they are qualified to install and test the provided products.

c. All installers assigned to the installation of this system or any of its components shall have a minimum of 3 years experience in the installation of the specified copper and fiber optic cable and components.

1.5.2 Minimum Manufacturer Qualifications

The equipment and hardware provided under this contract will be from manufacturers that have a minimum of 3 years experience in producing the types of systems and equipment specified.

1.6 DELIVERY AND STORAGE

Equipment delivered and placed in storage shall be stored with protection from the weather, humidity and temperature variation, dirt and dust or other contaminants.

1.7 OPERATION AND MAINTENANCE MANUALS

Commercial off the shelf manuals shall be furnished for operation, installation, configuration, and maintenance for all products provided as a part of the premises distribution system. Specification sheets for all cable, connectors, and other equipment shall be provided.

1.8 RECORD KEEPING AND DOCUMENTATION

1.8.1 Cables

A record of all installed cable shall be provided in hard copy format per EIA ANSI/TIA/EIA-606A. The cable records shall include the required data fields for each cable and complete end-to-end circuit report for each complete circuit from the assigned outlet to the entry facility per EIA ANSI/TIA/EIA-606A.

1.8.2 Termination Hardware

A record of all installed patch panels and outlets shall be provided in hard copy format per EIA ANSI/TIA/EIA-606A. The hardware records shall include only the required data fields per EIA ANSI/TIA/EIA-606A.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Materials and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of the products and shall be the manufacturer's latest standard design that has been in satisfactory use for at least 1 year prior to installation. Materials and equipment shall conform to the respective publications and other requirements specified below and to the applicable requirements of NFPA 70.

2.2 UNSHIELDED TWISTED PAIR CABLE SYSTEM

2.2.1 Horizontal Cable

Horizontal cable shall meet the requirements of EIA ANSI/TIA/EIA-568-B.2-1 for Category 6. Cable shall be label-verified. Cable jacket shall be factory marked at regular intervals indicating verifying organization and performance level. Cable shall be rated CMP per NFPA 70. Cable shall be color coded as to voice and data to match jacks, as shown on Dwg. E-09: Voice 1 -- White; Voice 2 -- Red; Data 1 -- Blue; Data 2 -- Green.

2.2.2 Connecting Hardware

Connecting and cross-connecting hardware shall be the same category as the cable it serves. Hardware shall be in accordance with EIA ANSI/TIA/EIA-568-B.

2.2.2.1 Telecommunications Outlets

Outlet assemblies used in the premises distribution system shall consist of modular jacks assembled into both simplex and duplex outlet assemblies in single or double gang covers and color coded Voice 1 -- White; Voice 2 -- Red; Data 1 -- Blue; Data 2 -- Green, as indicated on the drawings. Wall and desk outlet plates shall come equipped with two modular jacks, with the top or left jack labeled "voice" and the bottom or right jack labeled "data". Modular jacks shall be the same category as the cable they terminate and shall meet the requirements of EIA ANSI/TIA/EIA-568-B and shall meet the Link Test parameters as listed in EIA TIA/EIA-TSB-67 and supplemented by EIA ANSI/TIA/EIA-568-B.2-1. Modular jack pin/pair configuration shall be T568A per EIA ANSI/TIA/EIA-568-B. Modular jacks shall be unkeyed. Faceplates shall be provided and shall be ivory in color. Mounting plates shall be provided for system furniture and shall match the system furniture in color.

2.2.2.2 Patch Panels

Patch panels shall consist of eight-position modular jacks, color coded according to and matching those shown for outlets, with rear mounted type 110 insulation displacement connectors, arranged in rows or columns on cabinet mounted panels. Jack pin/pair configuration shall be T568A per EIA ANSI/TIA/EIA-568-B. Jacks shall be unkeyed. Panels shall be provided with labeling space. The modular jacks shall conform to the requirements of EIA ANSI/TIA/EIA-568-B, and shall be rated for use with Category 6 cable in accordance with EIA ANSI/TIA/EIA-568-B.2-1 and shall meet the Link Test parameters as listed in EIA TIA/EIA-TSB-67 and supplemented by EIA ANSI/TIA/EIA-568-B.2-1.

2.2.2.3 Terminal Blocks

Terminal blocks shall be wall mounted wire termination units consisting of insulation displacement connectors mounted in plastic blocks, frames or housings. Blocks shall be type 110 which meet the requirements of EIA ANSI/TIA/EIA-568-B, and shall be rated for use with Category 6 cable in accordance with EIA ANSI/TIA/EIA-568-B.2-1 and shall meet the Link Test parameters as listed in EIA TIA/EIA-TSB-67 and supplemented by EIA ANSI/TIA/EIA-568-B.2-1. Blocks shall be mounted on standoffs and shall include cable management hardware. Insulation displacement connectors shall terminate 22 or 24 gauge solid copper wire as a minimum, and shall be connected in pairs so that horizontal cable and connected jumper wires are on separate connected terminals.

2.3 FIBER OPTIC CABLE SYSTEM

2.3.1 Service Entrance Cable

2.3.1.1 Singlemode

singlemode fiber optic cable shall meet the requirements of ICEA S-83-596 and the following: operation at a center wavelength of 1310 nm; core/cladding diameter 8.3 nominal/125 micrometer; maximum attenuation 2.0 dB/km at 1300 nm, 1.75 dB/km at 1550 nm. Numerical aperture for each fiber shall be a minimum of 0.10. cable construction shall be tight buffered type. Cable shall be imprinted with fiber count and aggregate length at regular intervals. Individual fibers shall be color coded for identification. Cable shall be rated OFNP per NFPA 70.

2.3.2 Connecting Hardware

2.3.2.1 Connectors

Connectors shall be SC type with ceramic ferrule material with a maximum insertion loss of .5 dB. Connectors shall meet performance requirements of EIA ANSI/TIA/EIA-568-B. Connectors shall be field installable. Connectors shall utilize adhesive for fiber attachment to ferrule. Connectors shall terminate fiber sizes as required for the service. Station cable faceplates shall be provided and shall be ivory in color, impact resistant plastic, double gang, with double-sided female SC coupler. Mounting plates shall be provided for system furniture and shall match the furniture system in color.

2.3.2.2 Patch Panels

Patch panels shall be a complete system of components by a single manufacturer, and shall provide termination, splice storage, routing, radius limiting, cable fastening, storage, and cross-connection. Patch panels shall be 480 mm with extenders of 575 mm to fit cabinet mounted panels. Patch panels shall provide strain relief for cables. Panels shall be provided with labeling space. Patch panel connectors and couplers shall be the same type and configuration as used elsewhere in the system.

2.4 EQUIPMENT CABINETS

2.4.1 Inter-Rack Cabling

A. Inter-rack cabling shall be provided within the telecomm closets and equipment rooms as indicated on the drawings and elevations and/or as outlined in this specification.

B. All inter-rack cabling shall shall conform to installation and termination standards and criteria outlined elsewhere in this specification.

C. All inter-rack cabling shall run along ladder rack/cable tray above or neatly dressed along equipment frames to the main patching/cross connect frame.

2.4.2 Cross Connect and Patch Cords

A. All voice ports for all workstations shall be cross connected to the voice riser, using cross-connect wires of the same gauge as the workstation cable. Cross-connects shall be as directed by the Contracting Officer's representative after equipment vendor selection. The Contractor shall provide 4 pairs cross connects between horizontal wiring and service entrance cable within the telecomm closet.

B. A mounting bracket shall be provided at uper left hand corner of the wall field for mounting cross-connect spools. The spools shall be positioned to allow cross-connect wire to be pulled across the face of the wall field and be terminated.

C. All data ports for all workstations shall be cross-connected to cabinet mounted network hub/switches, using patch cords of the same quality as the workstation cabling. Patching shall be directed by the Contracting Officer's representative after equipment vendor selection.

D. Provide a quantity of patch cords equal to 1.5 times the number of standard workstations for patching between patch panels and network equipment withing the closet. Patch cords within the closets shall be provided in the following lengths:

Length	Percentage
4 ft	35%
6 ft	35%
10 ft	25%
15 ft	3%
25 ft	2%

E. Provide a quantity of patch cords equal to 1.5 times the number of standard workstations for patching between the workstation outlet and the end user equipment. Patch cords at the workstations shal be provided in the following lengths:

Length	Percentage
6 ft	80%

10 ft	15%
15 ft	5%

F. Patch cords shall be RJ45 to RJ45 Category, 6 568A Wiring Standard, and shall be factory manufactured and certified to comply with the Category 5e Specifications. The patch cords shall be 4 pairs each and shall be installed as specified by the Government or its representatives.

G. All patch cord RJ Type connectors shal be of the snagless type and shall be provided with color coded boots or reusable identifiers as directed. Each patch cord shall be provided as a minimum with a unique identifier indicated at each end.

H. All patching shall be performed from left to right and top to bottom, starting at the upper left hand corner of the termination blocks for all 110 Type termination blocks.

I. Patch cord color shall match outlet and patch panes, and shall be as identified on Dwg. E-09 for voice and data uses and in paragraphs 2.2.1 Horizontal Cables, 2.2.2.1 Telecomunications Outlets, and 2.2.2.2 Patch Panels by the Contracting Officer's representative. A choice of patch cord color selections shall be provided to the Government for selection prior prior to ordering the patch cords.

Prior to purchasing the patch cords, all cable color and lengths shall be coordinated with and confirmed by the Government. It shall be understood that the quantities presented above represent an allocation which shall be reconfirmed by the Government prior to purchase.

J. Cross-connects and patching connections records shall be provided by the Contractor as specified elsewhere.

K. All cross-connects shall be neatly dressed and tied, using color coded Velcro cable ties. Patching shall be performed so as to ensure the ability to easily read and access the patch panel port identification.

L. Patch cords shall be provided in varying lengths as indicated above to ensure a neat and organized installation. The maximum lengths for patch cord combined lengths on a single circuit shall conform to EIA/TIA-568A. Based on the patch cord allowance indicated above, the Government reserves the right to modify the patch cord lengths provided, to ensure a neat and orderly installation. The cabling Contractor shall make recommendations as to the required patch cord lengths to meet these objectives.

2.4.3 Cable Guides

Cable guides shall be specifically manufactured for the purpose of routing cables, wires and patch cords horizontally and vertically on 480 mm equipment racks. Cable guides shall consist of ring or bracket-like devices mounted on rack panels for horizontal use or individually mounted for vertical use. Cable guides shall mount to racks by screws and/or nuts and lockwashers.

2.4.4 Floor Mounted Cabinets -- 24 Inches Wide

Equipment cabinets shall be floor mounted enclosures with side panels, acrylic smoked plastic front doors, rear louvered metal doors, depth-adjustable front and rear mounting rails, and louvered top.

Ventilation fans shall be included. Vertical cable management devices shall be integral to the cabinet. Power strips with 12 outlets shall be provided within the cabinet. Equipment racks shall mount equipment 480 mm wide and shall be 1828 mm high and 760 mm deep. Cabinet exteriors shall be painted with manufacturer standard blue color.

2.5 EQUIPMENT MOUNTING BACKBOARD

Plywood backboards shall be provided, sized as shown, painted with white or light colored paint.

2.6 TELECOMMUNICATIONS OUTLET BOXES

Electrical boxes for telecommunication outlets shall be 117 mm square by 53 mm deep with minimum 9 mm deep single or two gang plaster ring as shown. Provide a minimum 25 mm conduit.

PART 3 EXECUTION

3.1 INSTALLATION

System components and appurtenances shall be installed in accordance with NFPA 70, manufacturer's instructions and as shown. Necessary interconnections, services, and adjustments required for a complete and operable signal distribution system shall be provided. Components shall be labeled in accordance with EIA ANSI/TIA/EIA-606A. Penetrations in fire-rated construction shall be firestopped in accordance with Section 07840 FIRESTOPPING. Conduits, outlets and raceways shall be installed in accordance with Section 16415A ELECTRICAL WORK, INTERIOR. Wiring shall be installed in accordance with EIA ANSI/TIA/EIA-568-B and as specified in Section 16415A ELECTRICAL WORK, INTERIOR. Wiring, and terminal blocks and outlets shall be marked in accordance with EIA ANSI/TIA/EIA-606A. Cables shall not be installed in the same cable tray, utility pole compartment, or floor trench compartment with ac power cables. Cables not installed in conduit or wireways shall be properly secured and neat in appearance and, if installed in plenums or other spaces used for environmental air, shall comply with NFPA 70 requirements for this type of installation.

3.1.1 Horizontal Distribution Cable

The rated cable pulling tension shall not be exceeded. Cable shall not be stressed such that twisting, stretching or kinking occurs. Cable shall not be spliced. Fiber optic cables shall be installed either in conduit or through type cable trays to prevent microbending losses. Copper cable not in a wireway shall be suspended a minimum of 200 mm above ceilings by cable supports no greater than 1.5 m apart. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items. Placement of cable parallel to power conductors shall be avoided, if possible; a minimum separation of 300 mm shall be maintained when such placement cannot be avoided. Cables shall be terminated; no cable shall contain unterminated elements. Minimum bending radius shall not be exceeded during installation or once installed. Cable ties shall not be excessively tightened such that the transmission characteristics of the cable are altered. In raised floor areas, cable shall be installed after the flooring system has been installed.

3.1.2 Telecommunications Outlets

3.1.2.1 Faceplates

As a minimum each jack shall be labeled as to its function and a unique number to identify cable link.

3.1.2.2 Cables

Unshielded twisted pair and fiber optic cables shall have a minimum of 150 mm of slack cable loosely coiled into the telecommunications outlet boxes. Minimum manufacturers bend radius for each type of cable shall not be exceeded.

3.1.2.3 Pull Cords

Pull cords shall be installed in all conduit serving telecommunications outlets which do not initially have fiber optic cable installed.

3.1.3 Terminal Blocks

Terminal blocks shall be mounted in orderly rows and columns. Adequate vertical and horizontal wire routing areas shall be provided between groups of blocks. Industry standard wire routing guides shall be utilized.

3.1.4 Unshielded Twisted Pair Patch Panels

Patch panels shall be mounted in equipment racks with sufficient modular jacks to accommodate the installed cable plant plus 10 percent spares. Cable guides shall be provided above, below and between each panel.

3.1.5 Fiber Optic Patch Panels

12-Strand patch panels shall be mounted in equipment cabinet with sufficient ports to accommodate the installed cable plant plus 10 percent spares. A slack loop of fiber shall be provided within each panel. Loop shall be provided as recommended by the manufacturer. The outer jacket of each cable entering a patch panel shall be secured to the panel to prevent movement of the fibers within the panel, using clamps or brackets specifically manufactured for that purpose.

3.1.6 Equipment Cabinets

Equipment racks shall be bolted to the floor slab. Cable guides shall be bolted or screwed to cabinets. Cabinets shall be installed level. Ganged cabinets shall be bolted together. Ganged cabinets shall have adjacent side panels removed. Wall mounted cabinets shall be secured to the mounting surface to prevent fully loaded racks from separating from the mounting surface.

3.1.7 Cabinet Mounted Equipment

Equipment to be cabinet mounted shall be securely fastened by means of the manufacturer's recommended fasteners.

3.1.8 Spare Parts

The Contractor shall provide spare parts data for each different item of material and equipment specified, after approval of the related submittals

and not later than the start of the field tests.

3.2 TERMINATION

Cables and conductors shall sweep into termination areas; cables and conductors shall not bend at right angles. Manufacturer's minimum bending radius shall not be exceeded. When there are multiple system type drops to individual workstations, relative position for each system shall be maintained on each system termination block or patch panel.

3.2.1 Unshielded Twisted Pair Cable

Each pair shall be terminated on appropriate outlets, terminal blocks or patch panels. No cable shall be unterminated or contain unterminated elements. Pairs shall remain twisted together to within the proper distance from the termination as specified in EIA ANSI/TIA/EIA-568-B. Conductors shall not be damaged when removing insulation. Wire insulation shall not be damaged when removing outer jacket.

3.2.2 Fiber Optics Cable

Each fiber shall have connectors installed. The pull strength between the connectors and the attached fiber shall be not less then 11.3 kg. The mated pair loss, without rotational optimization, shall not exceed 1.0 dB. Fiber optics connectors shall be installed per EIA ANSI/TIA/EIA/568-B.

3.3 GROUNDING

Signal distribution system ground shall be installed in the telecommunications entrance facility and in each telecommunications closet in accordance with EIA ANSI/TIA/EIA-607A and Section 16415A ELECTRICAL WORK, INTERIOR. Equipment racks shall be connected to the electrical safety ground.

3.4 ADDITIONAL MATERIALS

The Contractor shall provide the following additional materials required for facility startup.

a. 10 of each type outlet.

b. 10 of each type cover plate.

c. 1 of each type terminal block for each telecommunications closet.

e. 1 Set of any and all special tools required to establish a cross connect and to change and/or maintain a terminal block.

3.5 ADMINISTRATION AND LABELING

3.5.1 Labeling

3.5.1.1 Labels

All labels shall be in accordance with EIA ANSI/TIA/EIA-606A.

3.5.1.2 Cable

All cables will be labeled using color labels on both ends with encoded identifiers per EIA ANSI/TIA/EIA-606A.

3.5.1.3 Termination Hardware

All workstation outlets and patch panel connections will be labeled using color coded labels with encoded identifiers per EIA ANSI/TIA/EIA-606A.

3.6 TESTING

Materials and documentation to be furnished under this specification are subject to inspections and tests. All components shall be terminated prior to testing. Equipment and systems will not be accepted until the required inspections and tests have been made in accordance with the approved Test Plan submitted by the Contractor, demonstrating that the signal distribution system conforms to the specified requirements, and that the required equipment, systems, and documentation have been provided. The Contractor shall submit Test Reports as they are completed.

3.6.1 Unshielded Twisted Pair Tests

All metallic cable pairs shall be tested for proper identification and continuity. All opens, shorts, crosses, grounds, and reversals shall be corrected. Correct color coding and termination of each pair shall be verified in the communications closet and at the outlet. Horizontal wiring shall be tested from and including the termination device in the communications closet to and including the modular jack in each room. Backbone wiring shall be tested end-to-end, including termination devices, from terminal block to terminal block, in the respective communications closets. These test shall be completed and all errors corrected before any other tests are started.

3.6.2 Category 6 Circuits

All category 6 circuits shall be tested using a test set that meets the Class II accuracy requirements of EIA TIA/EIA-TSB-67 standard, including the additional tests and test set accuracy requirements of EIA ANSI/TIA/EIA-568-B.2-1. Testing shall use the Basic Link Test procedure of EIA TIA/EIA-TSB-67, as supplemented by EIA ANSI/TIA/EIA-568-B.2-1. Cables and connecting hardware which contain failed circuits shall be replaced and retested to verify the standard is met.

3.6.3 Shielded Twisted Pair

Wiring configuration shall be tested for continuity, opens, shorts, swaps and correct pin configuration; dc resistance both pair-to-pair and wire-to-shield shall be verified. Cable lengths shall be verified. Near end crosstalk shall be tested from 772 kHz to 300 MHz. Ground potential difference between wiring closets, ground potential difference between patch panel and wall outlet, and ground path resistance shall be tested per IBM GA27-3361-07.

3.6.4 Coaxial Cable

Cable shall be tested for continuity, shorts and opens. Characteristic impedance shall be verified over the range of intended operation. Cable length shall be verified. Cable shall be sweep tested for attenuation over

the range of intended operation.

3.6.5 Fiber Optic Cable

Unless stated otherwise, tests shall be performed from both ends of each circuit. Connectors shall be visually inspected for scratches, pits or chips and shall be reterminated if any of these conditions exist. Each circuit leg and complete circuit shall be tested for insertion loss at 850 and 1300 nm using a light source similar to that used for the intended communications equipment. High-resolution optical time domain reflectometer (OTDR) tests shall be performed from one end of each fiber. Scale of the OTDR trace shall be such that the entire circuit appears over a minimum of 80 percent of the X-axis.

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
Military Entrance Processing Station, Niagara Falls JARS, NY

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		08110	SD-02 Shop Drawings															
			Doors	2.1	G	G												
			Doors	2.1	G	G												
			Frames	2.6	G	G												
			Frames	2.6	G	G												
			Accessories	2.4	G													
			Weatherstripping	2.8	G													
			SD-03 Product Data															
			Doors	2.1	G													
			Frames	2.6	G													
			Accessories	2.4	G													
			Weatherstripping	2.8	G													
			SD-04 Samples															
			Factory-applied enamel finish		G													
		08120	SD-02 Shop Drawings															
			Doors and frames	2.1	G													
			SD-08 Manufacturer’s Instructions															
			Doors and frames	2.1														
		08210	SD-02 Shop Drawings															
			Doors	2.1	G													
			SD-03 Product Data															
			Doors	2.1	G													
			SD-04 Samples															
			Doors	2.1														
			Door finish colors	2.3.4.3	G													
			SD-06 Test Reports															

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							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		08210	Split resistance															
			Cycle-slam															
			Hinge loading resistance															

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		16710A	SD-02 Shop Drawings															
			Premises Distribution System	1.7	G	RO												
			Installation	3.1	G	RO												
			SD-03 Product Data															
			Record Keeping and	1.8	G	RO												
			Documentation															
			Spare Parts	3.1.8	G	RO												
			Manufacturer's Recommendations		G	RO												
			Test Plan	3.6	G	RO												
			Qualifications	1.5	G	RO												
			SD-06 Test Reports															
			Test Reports	3.6	G	RO												
			SD-07 Certificates															
			Premises Distribution System	1.7	G	RO												
			Materials and Equipment	2.1	G	RO												
			Installers	1.5.1	G	RO												